

MANAGEMENT PLAN
FOR
DEVELOPING, IMPLEMENTING, AND SUSTAINING
THE
NATIONAL INDIAN CENTER FOR MARINE
ENVIRONMENTAL RESEARCH AND EDUCATION
AT
NORTHWEST INDIAN COLLEGE

Edition 1



NORTHWEST
INDIAN COLLEGE
Xwilemi Eih>Tah>Nexw Squl

Written by

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INTRODUCTION AND OVERVIEW

The National Indian Center for Marine Environment Research and Education (NICMERE) was developed to increase the presence and influence of Native American leadership in the arena of conservation and natural resource management. Resource management requires solutions that effectively balance the conservation of resources and sustainable economic development, especially in today's world. Few Native Americans have received the education and training necessary to carry out these responsibilities. Specifically, the NICMERE program is charged with increasing the number of Native Americans in natural resource professions that serve their communities.

This plan provides a roadmap by which NICMERE will be designed, implemented and sustained to permit qualified students to proceed from pre-curriculum preparation through a Bachelor's of Science in Native Environmental Sciences at Northwest Indian College (NWIC). NICMERE and partner Memorandum of Understanding (MOU) organizations will work to expand the capabilities and capacity of NWIC in such a way that students are exposed to competitive science grounded in place and relevant on a global scale. Research will be culturally relevant and scientifically rigorous.

The intent of this plan is open to additional options and does not replace or affect any current or planned agreements between the NICMERE/NWIC and MOU partners and any other mainstream institutions.

This plan will be evaluated against the following 5 year goals for NICMERE

- Building of the Salish Sea Research Center
- Outfitting the new Salish Sea Research Center with necessary equipment to study and monitor the traditional areas of the Coast Salish People.
- Build the capacity for natural science research at NWIC
- Increase the relevance of NICMERE to local research in the Salish Sea

NICMERE is actively seeking funding to implement this plan from both public and private funding sources.

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I. MISSION, VISION, FEATURE AND GOALS

MISSION

The mission of NICMERE is to prepare the next generation of environmental scientists and leaders through fostering respect for indigenous knowledge of nature, providing opportunities for students to gain a solid background in scientific methods, and fostering critical thinking skills and self motivation. One focal point of NICMERE research is using traditional knowledge and ancient material to define a pre-European ecological baseline for the Salish Sea, including the distribution, abundance, and productivity of marine species. This holistic picture of the Salish Sea prior to European impacts will be used to evaluate current ecosystems, determine climate impacts and guide restoration. Starting with a mechanistic approach, traditional management strategies will be applied to modern conservation issues, to promote sustainability and resilience.

VISION

NICMERE envisions a sustainable program that engages indigenous knowledge and scientific learning. NICMERE research will involve students in active learning to support students perusing a Bachelor's of Science in Native Environmental Science (BSNES).

PROGRAM FEATURES AND GOALS

- Curricula and processes developed will promote student self-identity through focusing on the intersection between Indigenous Knowledge and Western Science.
- Research programs will be bring Indigenous Knowledge to modern ecological issues.
- Faculty and students will be actively involved in research and scholarship.
- All programs are designed to attract, motivate, and retain Native American students. Special pre-curriculum preparation will be available in basic science, mathematics, and communications skills in order to ensure that all qualified students have the opportunity to engage in NICMERE research.
- Each student who completes the NICMERE experience and graduates with a BNES degree will be equipped with the education necessary to continue on to graduate study at a mainstream institution.
- Each student who completes the NICMERE experience and graduates with a BSNES degree and does not wish at attend graduate school will be equipped with the education necessary to fill natural resource management or aquaculture positions in the tribal, local, state, or national workforces.
- Students who graduate with an associate's degree will be qualified for natural resource technician positions, and for continued upper division studies leading to the BSNES degree. Students will be encouraged through hands-on research to continue their natural sciences education at least through a BSNES degree.

II. Long Term Goals

- Development of the Salish Sea Research Center as a regionally recognized center for marine science and Indigenous Knowledge
- Introduce students to natural resource and environmental science opportunities through NICMERE research, internships, and mentoring opportunities
- Increase the number of Native Americans with the skills and training necessary to succeed in environmental and entrepreneurial activities
- Educate others about NICMERE and work to increase partnerships and pool resources. Provide a focus and framework for state and federal agencies and Tribal, private and non-profit organization, including educational and research institutions to get involved to help increase the educational and professional opportunities available to Native Americans.

III. Current Program Status

Increasing the amount of quality research with high levels of student involvement is a priority at NWIC and is identified in the institution's strategic plan. NICMERE is charged with taking a leadership role in the implementation of marine and environmental research at NWIC. However, in the past NICMERE has lacked a clear vision and drive to implement a sustainable culturally relevant research program. NICMERE is now lead by Native American administrators and the Associate Director has a doctorate from Scripps Institution of Oceanography. Under the current leadership NICMERE is now positioned to take a greater role in marine and environmental research and education at NWIC.

Further evidence of the NWIC's commitment to science research that engages students is found in the significant role science buildings fill in the College's ongoing campaign to construct a new campus. The original campus consists of fifteen buildings. Twelve of those, including the science building, are modular and were acquired in the 1980s or early 1990s. The original science building was acquired when the federal government declared it surplus. It is only through the dedicated efforts of our maintenance staff that it has lasted as long as it has.

NWIC is in the midst of a \$44 million capital campaign to construct a new campus on property adjacent to the original campus. To date, over \$36 million has been raised. Seven buildings have been completed, additionally a dedicated 4,000 sqft science research building (Salish Sea Research Center) is currently under construction. One of the seven newly constructed buildings is a science building housing offices for science faculty, instructional classrooms, and teaching laboratories.

IV. Agreement with External Institutions

This program will not interfere with any ongoing or planned agreements between NWIC / NICMERE and outside organizations. The intention of this management plan is to expand and increase working relationships with current and additional partners with the goal of increasing the number of Native Americans who graduate with degrees related to natural sciences. The current Memorandum of Understanding with external partners can be found in Appendix A.

V. Laboratory Equipment and Research Infrastructure

NWIC currently has five science laboratory classrooms, where biology, chemistry, geology, and environmental science classes are taught. To support instruction and research NWIC and has a water quality laboratory, analytical chemistry laboratory, access to aquaculture facilities (geoducks, oysters, clams), access to two production salmon hatcheries, and use of outdoor fish tanks and raceways. These labs are equipped with a variety of equipment including but not limited to a precision Incubator / HACH supplies, Leica stereoscope microscope for analyzing samples, total organic carbon atomizer fluorometer, infrared spectrophotometer, and an atomic absorption spectrophotometer. NWIC has two boats capable of navigating saltwater and freshwater environments including a 26ft chambered aluminum boat equipped with a SeaBotix MiniROV for underwater video and images in addition to space available access to the R/V Centennial operated by University of Washington Friday Harbor Laboratories.

VI. New Facility Construction

Salish Sea Research Center (SSRC) (under construction and to be completed in May 2013) is a 4,000 sqft dedicated research building and will be the center of NICMERE research activities. The SSRC symbolizes the dedication and investment NWIC has made toward the sciences and marine research. The SSRC will house dedicated labs for; biology, experimental biology, microscopy, analytical chemistry, and biotoxin research. NWIC and NICMERE are currently seeking funds to outfit the SSRC with the necessary equipment to carry out marine and environmental research.

VII. Program Funding

Five year funding

	Year 1 (\$)	Year 2 (\$)	Year 3 (\$)	Year 4 (\$)	Year 5 (\$)
Two Full-time Faculty Researchers	83,040	84,480	85,920	87,360	88,800
Benefits	27,403	27,878	28,354	28,829	29,304
Travel	10,000	10,000	10,000	10,000	10,000
Supplies	5,000	5,000	5,000	5,000	5,000
Equipment	500,000	20,000	20,000	20,000	20,000
Indirect cost	64,057	65,168	66,279	67,390	68,500
Total	\$689,500	\$212,526	\$215,552	\$218,578	\$221,604
Five year Program Cost	\$1,557,761				

(Appendix A NICMERE management plan)
**MEMORANDUM OF UNDERSTANDING
BETWEEN
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE
AND
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
OFFICE OF NATIONAL MARINE SANCTUARIES
AND
UNIVERSITY OF WASHINGTON
COLLEGE OF OCEAN AND FISHERY SCIENCES
WASHINGTON SEA GRANT
AND
NORTHWEST INDIAN COLLEGE
CONCERNING THE DEVELOPMENT
OF
THE NATIONAL INDIAN CENTER
FOR
MARINE AND ENVIRONMENTAL RESEARCH AND EDUCATION**

I. INTRODUCTION

The Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Northwest Fisheries Science Center (NWFSC); NOAA National Ocean Service (NOS), Office of the National Marine Sanctuaries (ONMS); University of Washington (UW), College of Ocean and Fishery Sciences (COFS), Washington Sea Grant (WSG); and Northwest Indian College (the College or NWIC) desire to collaborate in the areas of aquaculture, fisheries, oceanographic and environmental/habitat research, restoration, monitoring, and evaluation. The common research, education, and outreach interests of NWFSC, ONMS, WSG, and NWIC present unique opportunities to improve the efficiency and effectiveness of all institutions.

II. PARTIES

This document constitutes an agreement between the DOC/NOAA/NMFS/NWFSC, DOC/NOAA/NOS/ONMS, UW/COFS/WSG, and the NWIC. The NWFSC is a federal program designed to study living marine resources and their habitats in the Northeast Pacific Ocean. The ONMS is a federal program that manages protected areas, including the Olympic Coast National Marine Sanctuary, and conducts research and educational programs. The WSG is state program focused on research, education, and outreach related to sound management

and use of the marine environment and its resources. The NWIC is an accredited tribal college that provides post-secondary education and research opportunities to students on reservations throughout the Northwest.

III. MUTUAL INTEREST OF THE PARTIES

This Memorandum of Understanding (MOU) between the NMFS/NWFSC, NOS/ONMS, WSG, and the NWIC (collectively referred to herein as the Parties) reaffirms their common interest in marine resources and habitat research and provides a framework for future cooperative interdisciplinary research and instruction efforts.

IV. PURPOSE

This agreement is to further the mission of the Department in that it will expand and strengthen the partnerships of the Department with Tribal Colleges and Universities as stated in Presidential Executive Order 13720 of July 3, 2002. The MOU provides a cooperative framework for the parties to establish a NOAA, WSG, and NWIC research, education, and outreach program.

V. OBJECTIVES

- A. To foster collaborative research between NMFS/NWFSC, NOS/ONMS, WSG, and the College in aquaculture, fisheries, oceanography, and other fresh water and marine-related fields;
- B. To stimulate the training of scientists and managers in the disciplines associated with broadly-based marine studies, including, but not limited to biological, ecological (including the integration of traditional knowledge), economic, and social aspects, marine resource and protected areas management, as well as areas in support of scientific infrastructure, including but not limited to computer science, programming, systems design, database administration and distance learning facilities;
- C. To facilitate collaborative research and the exchange of ideas among scientists and managers associated with the Parties, Tribes, and individuals visiting from other organizations to increase collective productivity and the application of findings to management and conservation of living marine resources and their habitats;
- D. To improve the effectiveness of teaching in marine and fresh water areas through close coordination and collaboration by the Parties; and
- E. To provide educational opportunities for managers and users of marine and coastal resources.

VI. RESPONSIBILITIES

In fulfilling the objectives of this MOU, the Parties agree to participate in and be responsible for activities as follows:

NMFS/NWFSC and NOS/ONMS, subject to the availability of resources, will:

- Provide NWIC with information on employment and internship opportunities within NOAA;
- Provide opportunities for NOAA employees to serve at NWIC and for faculty members of NWIC to serve temporarily in positions at NOAA;
- Provide opportunities for NOAA employees to participate on student thesis committees, mentor students, supervise individualized student study, and teach;
- Provide assistance with curriculum development, research program development and implementation, and community education efforts. With regard to these endeavors, give strong consideration to the use of Intergovernmental Personnel Act (IPA) (5 U.S.C. §§ 3371-76) assignments at NWIC; and
- Increase collaborative efforts with NWIC to promote community outreach initiatives that inspire and motivate Indian students to pursue careers in the oceanic, atmospheric, and environmental sciences.

UW/COFS/WSG, subject to the availability of resources, will:

- Provide NWIC faculty, staff, and students with information on research funding, program development funding, fellowships and internships for which they may be eligible;
- Increase collaborative efforts with NWIC to strengthen ocean literacy and inspire and motivate Indian students to pursue careers in oceanography and marine and environmental sciences;
- Provide assistance with the development of programs and curricula for NWIC adult education programs including technical training and support; and
- Encourage collaborative outreach and education programs that develop and sustain tribal natural resources and support businesses and industries dependent on those resources.

NWIC, subject to the availability of resources, will:

- Act as a liaison between NMFS/NWFSC, NOS/ONMS, WSG, and Tribal Organizations related to environmental education in the areas of aquaculture, fisheries, climate change, environmental health, oceanographic research, environmental/habitat research, restoration, environmental technology, and monitoring and evaluation;
- Collaborate with NMFS/NWFSC, NOS/ONMS, and WSG in the development and implementation of research and outreach projects and programs that support Tribal needs;
- Collaborate with NMFS/NWFSC, NOS/ONMS, and WSG to support the NWIC's Native Environmental Science Bachelor of Science through the development of internship opportunities and through providing assistance to students in their efforts to obtain educational, research, and mentoring experiences;
- Facilitate the formation of collaborative projects between the Parties and existing NWIC partners, including the University of British Columbia, Western Washington University, the University of Washington, and Washington State University; and
- Work with NMFS/NWFSC, NOS/ONMS, and WSG in the development of an Indian Fisheries Education and Research Center.

VII. IMPLEMENTING AGREEMENTS

The Director of the NWFSC, Director of the ONMS, Director of WSG, and the President of the NWIC are authorized to execute on behalf of the Parties such additional agreements as may be necessary to carry out the purposes of the MOU. The Parties must approve any such agreement.

VIII. CONTACTS

The contacts for this Agreement are:

For the DOC/NOAA/NMFS/NWFSC:
Dr. Usha Varanasi, Science Director
Northwest Fisheries Science Center
2725 Montlake Blvd. East
Seattle, Washington 98112-2097
(206) 860-6795

For the DOC/NOAA/NOS/ONMS:

Daniel J. Basta, Director
NOAA Office Of National Marine Sanctuaries
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-3125

For the UW/COFS/WSG:

Penelope D. Dalton
Washington Sea Grant
3716 Brooklyn Avenue NE
Seattle, Washington 98105-6716

For the NWIC:

Cheryl Crazy Bull
Northwest Indian College
2522 Kwina Road
Bellingham, WA 98226-9217

IX. FINANCIAL AGREEMENTS

This MOU does not constitute a financial commitment on the part of any Party.

X. TERM

This MOU is effective as of the date of signature by all Parties and will continue in force for five (5) years and may be renewed by mutual agreement of the parties at the end of that term. Any Party may terminate upon one year's written notice to the other Parties. All projects in progress at the time of such notice shall be completed in accordance with the least disruptive impact on the research or training and may be extended by mutual agreement beyond the termination date.

XI. MODIFICATIONS

Proposals to modify the terms of this MOU can be initiated by any party and are subject to approval by the Assistant Administrator for Fisheries, Assistant Administrator for NOS, the Science Director of the NWFSC, the Director of the ONMS, the Director of WSG, and by the President of the College.

XII. AUTHORITY

NOAA's collaboration with the NWIC is authorized under 15 U.S.C. § 1540, which allows NOAA to enter into agreements with any non-profit organization to aid and promote scientific and educational activities to foster public understanding of NOAA and its programs; and also Executive Order No. 13270 (July 3, 2002) which encourages agencies to expand and strengthen partnerships with Tribal Colleges and Universities.

The scientific activities contemplated are authorized under the following statutes:

- A. 16 U.S.C. Section 757 et seq., the Anadromous Fish Conservation Act, which authorized the Secretary of Commerce to use the facilities and services of the agencies of the States of Oregon, Washington, and Idaho responsible for the conservation of the fish and wildlife resources in such states, under the terms of agreements entered into between the United States and these states;
- B. 16 U.S.C. Section 1531 et seq., the Endangered Species Act, which provides that all Federal agencies shall seek to conserve endangered species and threatened species, and cooperate with state and local agencies to resolve water resource issues in concert with conservation of endangered species;
- C. 16 U.S.C. Section 1854 et seq., the Magnuson-Stevens Fishery Conservation and Management Act, which provides that the Secretary of Commerce shall initiate and maintain a comprehensive program of fishery research to carry out and the purposes, policy, and provisions of the Magnuson-Stevens Fishery Conservation and Management Act; and
- D. 16 U.S.C. Section 2901 et seq., the National Aquaculture Policy, Planning and Development Act, which provides that all Federal departments are encouraged to utilize their statutory and administrative authority to conserve and promote conservation of nongame fish and wildlife and their habitats.

The legal authority for NOS/ONMS to enter into this Agreement is the National Marine Sanctuaries Act (NMSA), 16 U.S.C. 1442 (e), which allows the Secretary, whenever appropriate, to enter into an agreement with a State or other Federal agency to use the personnel, services, or facilities of such agency on a reimbursable or nonreimbursable basis, to assist in carrying out the purposes and policies of the NMSA.

The programmatic authority for the NOS/ONMS to enter into this Agreement is the NMSA, 16 U.S.C. 1431 *et seq.* Among the NMSA's Purposes and Policies is 16 U.S.C. 1431(b)(4), which directs the NOS/ONMS to enhance public awareness, understanding, appreciation, and wise and sustainable use of the marine environment, and the natural, historical, cultural, and archaeological resources of the National Marine Sanctuary System; 16 U.S.C. 1431(b)(5) to support, promote, and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas; and 16 U.S.C. 1431(b)(7) to develop and implement coordinated plans for the protection and management of these areas with appropriate Federal agencies, State and local governments, Native American tribes and organizations, international organizations, and other public and private interest concerned with the continuing health and resilience of these marine areas.

This MOU is further authorized by a Resolution of the Board of Trustees of Northwest Indian College as passed on December 16, 1999.

Approved:

Northwest Indian College

By: 
Cheryl Crazy Bull, President

Date: Jan. 25, 2010

By: 
Kristen Kinley, Chair
College Board of Trustees

Date: 1/25/10

Department of Commerce

By: 
for James Balsiger, Ph.D.
Acting Assistant Administrator for Fisheries
National Marine Fisheries Service, NOAA

Date: 10/21/09

By: 
Usha Varanasi, Ph.D.
Director of Science and Research

Date: Oct 20 '09

By: _____

DATE: _____

Usha Varanasi, Ph.D.
Director of Science and Research
Northwest Fisheries Science Center
National Marine Fisheries Service

National Marine Fisheries Service, NOAA

By: *Daniel J Basta*
Daniel J. Basta
Director
Office of National Marine Sanctuaries
National Ocean Service

Date: 10/29/09

College of Ocean and Fishery Sciences/Washington Sea Grant

By: *Arthur R.M. Nowell*
Arthur R.M. Nowell, Ph.D.
Dean
College of Ocean and Fishery Sciences
University of Washington

Date: 27 October 2009

By: *Penelope Dalton*
Penelope Dalton
Director
Washington Sea Grant
University of Washington

Date: October 27, 2009